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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,664	12/03/2001	Thomas C. Hoegemeyer	N1258-004	7581

32905 7590 06/17/2003

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EXAMINER

FOX, DAVID T

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 06/17/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/998,664

Applicant(s)

Hoeszemer

Examiner

FOX

Group Art Unit

1638

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☒ Responsive to communication(s) filed on 4/3/03
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-20 is/are pending in the application.
- Of the above claim(s) 17-20 is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-16 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____.

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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Applicant's election without traverse of Group I in Paper No. 6 is acknowledged.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 10 and 14-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 is indefinite in its recitation of "[Y]ellow dent or flint corn seed" as it is unclear whether the flint corn seed is also yellow. If intended, insertion of --yellow-- before "flint" would obviate this rejection.

Claim 14 is indefinite in its recitation of "wherein said inbred plant has at least one GaS allele" which fails to further limit claim 12, drawn to an inbred which is heterozygous for GaS and ga alleles, i.e. which has only one GaS allele.

Claims 15-16 are indefinite in their recitation of "F1 seed produced has less than .05 [or .01] percent outcross seed" which is confusing, since F1 seed by definition has 100% outcross seed. Neither the specification nor the prior art provide an alternate definition of "outcross", other than the art-recognized definition of a cross between genetically different parents.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Applicant's admitted state of the prior art.

The claims are broadly drawn to a method of producing field corn comprising crossing a male corn inbred, including a popcorn inbred, homozygous for the GaS allele which confers cross-incompatibility, with any second field corn genotype of any color, and the resultant F1 seed of any color.

Applicant's admitted state of the prior art teaches the crossing of popcorn inbreds containing the GaS allele with white field corn inbreds to produce F1 seed (see, e.g., page 2 of the specification, lines 16-23).

Claims 5, 7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by each of Podol'skaya (1988) and Sevov.

The claims are drawn to a method of producing field corn comprising crossing a male popcorn inbred heterozygous for the GaS allele with an elite yellow corn inbred to produce F1 seeds, and the resultant F1 seeds.

Podol'skaya (page 1431) and Sevov (page 25) each teach the crossing of a high lysine yellow maize inbred with a popcorn inbred homozygous for the GaS allele to produce F1 seed.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8, 11 and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over each of Podol'skaya (1982), Nelson and Kermicle et al.

The claims are drawn to F1 hybrid (claim 8) or other type of hybrid (claims 11 and 14) maize seed produced by crossing parents selected from the group consisting of any corn inbred homozygous for the GaS allele, a yellow elite corn inbred homozygous for the GaS allele or an elite corn inbred heterozygous for the GaS allele. The resultant hybrids would encompass a white or yellow corn plant heterozygous for the GaS allele. The specification defines "elite" as being either flint or dent corn (see, e.g., page 4 of the specification, lines 20-25), of which sweet corn is a subset.

Podol'skaya teaches F1 and F2 plants with an elite white or yellow sweet corn parent, which F1 or F2 plants are heterozygous for the GaS allele (see, e.g., page 1198, third paragraph through page 1200, fourth paragraph).

Nelson teaches Central American races of field and dent corn which are heterozygous for the GaS allele (see, e.g., page 497, second full paragraph; page 501, first two full paragraphs).

Kermicle et al teach maize plants heterozygous for the GaS allele with the elite corn inbred W22 as a parent (see, e.g., page 400, column 1; page 401, Table 2).

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The maize plants taught by the prior art differ from the claimed maize plants only in their method of production, i.e. the crossing of particular parents. However, the method of making a yellow field (or sweet) corn hybrid heterozygous for the GaS allele would not distinguish the resultant hybrid itself from the prior art corn plants also heterozygous for the GaS allele. See *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985), which teaches that a product-by-process claim may be properly rejectable over prior art teaching the same product produced by a different process, if the process of making the product fails to distinguish the two products.

Claims 11 and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Miller (U.S. 5,491,294).

The claims are broadly drawn to any type of hybrid yellow corn plants produced by utilizing as one parent an inbred heterozygous or homozygous for the GaS allele. Such hybrids would encompass F1 hybrids produced by crossing an inbred heterozygous for the GaS allele (claim 14) with another inbred which is homozygous for the ga allele, resulting in a hybrid plant with no GaS alleles. Such hybrids would also encompass triple cross hybrids produced by crossing an inbred homozygous for the GaS allele (claim 11) with an inbred homozygous for the ga allele, resulting in an offspring heterozygous for the GaS allele, which is then crossed with another inbred homozygous for the ga allele, resulting in hybrid plants with no GaS alleles.

Miller teach yellow elite corn hybrids produced by crossing the yellow elite corn inbred LH185 with the yellow elite corn inbreds LH195, LH198, LH132 and LH174 (see, e.g., column 4, lines 56-64; Tables 1-4 in columns 7-8), which hybrids inherently contain no GaS alleles.

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Claims 1-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Podol'skaya (1982) taken with each of Nelson, Podol'skaya (1988) and Sevov.

The claims are broadly drawn to methods of incorporating the GaS cross-incompatibility allele into elite yellow field corn inbreds and hybrids, by utilizing as parents elite yellow inbreds which are heterozygous or homozygous for the GaS allele, where the resultant hybrids containing the GaS allele are unable to cross with plants not containing this allele. The elite yellow inbreds containing the GaS allele were produced via crossing an elite yellow inbred with a plant containing the GaS allele, and then backcrossing to the elite yellow inbred.

Podol'skaya (1981) teaches the crossing of elite field and sweet corn inbreds with plants containing the GaS allele, as discussed above, but does not teach elite yellow inbreds containing the GaS allele or hybrids produced therefrom.

Each of Nelson (page 499, second full paragraph), Podol'skaya (1988, page 1431), and Sevov (page 25) suggest the use of the GaS allele to prevent the outcrossing of desirable elite maize genotypes with other plants, thus preserving the genetic integrity of the desirable genotypes.

It would have been obvious to one of ordinary skill in the art to utilize the method for introgressing the GaS allele into elite yellow field corn genotypes as taught by Podol'skaya (1982), and to modify that method by deriving elite inbreds and hybrids containing the GaS allele, as suggested by each of Nelson, Podol'skaya (1988), and Sevov. Choice of inbred heterozygous or homozygous for the GaS allele, or choice of type of hybrid produced, would have been the

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optimization of process parameters. The measurement of the degree of contamination with other pollen would have been an obvious design choice to confirm the effectiveness of the technique.

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David T. Fox whose telephone number is (703) 308-0280. The examiner can normally be reached on Monday through Friday from 10:30AM to 7:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached on (703) 306-3218. The fax phone number for this Group is (703) 872-9306. The after final fax phone number is (703) 872-9307.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

June 15, 2003

DAVID T. FOX
PRIMARY EXAMINER
GROUP 180 1638

A handwritten signature in black ink, appearing to read 'David T. Fox', written over the printed name and title.